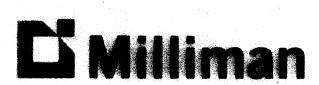
Actuarial Valuation as of June 30, 2009

**Prepared October 2009** 



### June 30, 2009 Actuarial Valuation

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### June 30, 2009 Actuarial Valuation

### **Introduction and Purpose**

In this report, we present the results of the June 30, 2009 actuarial valuation for the City of Springfield Police Officers and Fire Fighters' Retirement Fund. The report has been prepared at the request of the Fund's Board for the sole use of the Board and the City of Springfield as the contributing plan sponsor.

### **PURPOSES OF THE VALUATION**

The actuarial valuation of the Plan is intended to accomplish several purposes:

- The determination of the recommended level of employer contributions for the City's July 1, 2010 June 30, 2011 fiscal year;
- provide information required under applicable governmental accounting standards;
- assessment of the relative funded position of the plan on an ongoing basis, i.e., through a comparison of plan assets and projected plan liabilities.

### June 30, 2009 Actuarial Valuation

### **Actuarial Certification**

As requested, we performed an actuarial valuation of the City of Springfield Police Officers and Fire Fighters' Retirement Fund as of June 30, 2009 for the fiscal year ending June 30, 2011. Our findings are set forth in this actuary's report. This report reflects the benefit provisions and contribution rates in effect as of June 30 2009.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the City. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the Fund have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the Fund and reasonable expectations); and which, in combination, offer our best estimate of anticipated experience affecting the Fund.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in this report.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the Fund. Actuarial computations presented in this report under GASB Statements No. 25 and 27 are for purposes of fulfilling financial accounting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the Fund's funding requirements and goals. The calculations in this report have been made on a basis consistent with our understanding of the plan provisions described in this report, and of GASB Statements No. 25 and 27. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of the City of Springfield. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s):

- (a) The City may provide a copy of Milliman's work, in its entirety, to the Fund's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the Fund.
- (b) The City may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

We respectfully submit the following report, and we look forward to discussing it with you.

Sincerely

Michael J. Zwiener, FSA

Consulting Actuary

MJZ/MAS/giy

Michael A. Sudduth, FSA

Actuary

### June 30, 2009 Actuarial Valuation

### **Discussion of Valuation Results**

### 1. Contribution Recommendation and Plan Experience

The results of this valuation are used to determine recommended contribution rates to the Fund for the July 1, 2010-June 30, 2011 fiscal year. A comparison of recommended contribution rates (presented as a percentage of pay) for the current and immediately preceding valuations is shown below:

	Actuarial Valuation as of	
	June 30, 2008	June 30, 2009
Applies to Fiscal Year	07/01/09-06/30/10	07/01/10-06/30/11
Member Contribution Rate	11.16%	15.34%*
City Contribution Rate	52.36%	57.77%
Total	63.52%	73.11%

<sup>\*</sup> Based on a blend of Members contributing 8.5% (hired on or after June 1, 2006) and 16.02% (hired before June 1, 2006).

The contribution rate for Tier 1 Members is the sum of a flat 8.5% rate plus the Additional Funding Contribution (AFC). The AFC is to be set to cover the cost of the additional 0.3% multiplier. Statute requires that the AFC be adjusted each 5 years. The AFC was last recalculated in the June 30, 2004 actuarial valuation at a rate of 2.85%. The AFC has been calculated as of June 30, 2009 to be 7.52% (total Tier 1 contribution rate of 16.02%).

There was an increase in the recommended contribution rate as compared to the preceding year. The primary reasons for the increase are actuarial losses due to poor investment return and the implementation of the new actuarial assumptions and methods recommended in our June 30, 2009 experience study as modified and accepted by the Board on September 21, 2009. A reconciliation of the recommended contribution rate from last year to this year is provided below:

June 30, 2008 valua	ation
---------------------	-------

67	500/	
co	.52%	

Experience (Gain)/Loss		
Investments	2.90%	
Prior Year Contribution Shortfall	0.00%	
Salary Scale/Active Data	-0.25%	
Average Salary at Retirement	0.38%	
Retirement	-0.34%	
Withdrawal	0.13%	
Disability	-0.19%	
Death	0.05%	
New Hires	0.02%	
Terminated Vested Refund	-0.01%	
Inactive Mortality	0.53%	
Other	-0.79%	
Assumption and Method Changes	7.16%	
_		
T 20 2000 1 .:		70 440/

June 30, 2009 valuation

73.11%

Pension Plan Section 2-457 provides that the source of City contributions is a tax levy not to exceed 1.5 mill on all taxable property in the City. The statue further provides that the City may alternatively fund on an actuarial basis subject to the discretion of the City Council.

### 2. Plan Assets

The market value of plan assets decreased from \$128,297,956 at June 30, 2008 to \$112,370,187 at June 30, 2009. A balance sheet and statement of income and disbursements are presented on pages 10 and 11, respectively. The net market rate of return was -19.1% for the period.

City contributions to the Fund for the year were \$23,979,519, and employee contributions totaled \$2,937,185. Benefit Payments total \$15,076,882 plus \$2,402,747 in refunded employee contributions.

The actuarial value of assets increased from \$140,780,239 at June 30, 2008 to \$147,197,520 at June 30, 2009. The net actuarial rate of return for the period was -2.1% vs. the assumed rate of 7.5%.

### 3. Actuarial Assumptions, Methods and Plan Provisions

This valuation incorporates the assumption and method changes recommended in our June 30, 2009 Experience Study and approved by the Pension Board. The changes include:

- a. increases to the Final Average Earnings load at retirement for Members 40 and older;
- b. RP-2000 Mortality Tables (pre and post retirement; healthy and disabled);
- c. increases to the disability incidence assumption at ages 41-55;
- d. minor changes to the retirement rates for ages 45-52;
- e. changes to the amortization method.

All other actuarial assumptions, methods and plan provisions remained the same as the prior year. Descriptions of these can be found on pages 18-25.

### 4. Plan Population

The number of active participants decreased from 505 in the previous valuation to 481 in the current valuation. The number of retirees/beneficiaries increased from 462 to 477. The number of deferred vested participants increased from 7 to 9.

### 5. Funded Status

Methods of measuring a Plan's funded status are prescribed in paragraph 37 of Statement 25 of the Governmental Accounting Standards Board.

The GASB rules provide a couple of bases for assessing the funded status of the plan on an ongoing basis (see page 16 for detailed calculations). One basis is to divide the actuarial value of assets by the Accrued Liability. Page 16 shows this ratio to be 46.5% for the current year. An upward trend in this ratio is considered a favorable indicator of the plan's funding progress while a downward trend is unfavorable.

Another measure displayed on page 16 is the Unfunded Accrued Liability as a percentage of covered payroll. A downward trend in this ratio over time is considered favorable while an upward trend is unfavorable.

As of June 30, 2009, the Fund has a Net Pension Asset under GASB 25/27 of \$260,948.

The Plan's funded status is steadily and significantly eroding. The actions below could help improve the Plan's funded status:

- 1. Increase contributions;
- 2. Improve investment returns;
- 3. Reduce future benefit liabilities, or
- 4. Some combination thereof.

The plan provision changes implemented in 2006 were a step in the right direction but since these changes only apply to post June 1, 2006 hires, it will take many years before these changes have an appreciable impact on the Plan's funding requirements.

### 6. Missouri Pension Reform Legislation

In 2007 the Missouri legislature passed legislation aimed at the state's public sector pension plans. The legislation was based on private pension reform instituted at the federal level. Many of the provisions are applicable to the Springfield Police Officers and Fire Fighters' Retirement Fund, including:

- Plans less than 60% funded are required to have an accelerated contribution schedule prepared by their actuary. We have prepared this schedule, and it is presented on page 15.
- Plans less than 60% funded that have contributed less than 100% of the required contribution for 5 consecutive years and have a declining funded ratio shall have state funds withheld.
- Plans less than 80% are prohibited from providing benefit enhancements, and plans over 80% funded may only provide benefit increases that allow the funded ratio to remain over 75%.
- Benefit increases must be amortized over 20 years.
- Increased fiduciary responsibility and education requirements.

### 7. Additional Comments

Although there has been some rebound since mid-March, stock market performance has not been this poor since the 1930's. Most public retirement systems are feeling the pain of significant asset losses. The investment returns on the market value of assets for the years ending June 30, 2008 and June 30, 2009 were -4.7% and -19.1%, respectively, compared to the assumed return of +7.5% each year. Expressed in dollars, the market value of assets on June 30, 2009 is more than \$50,000,000 lower than what would have existed if market returns had matched the assumption the last two years.

Retirement plans use several mechanisms to attempt to provide more stability in contribution levels, one of which is an asset smoothing method. This Fund utilizes a method that compares the expected return on assets with the return actually experienced. One quarter of the difference between expected and actual return (positive or negative) is recognized in the current year and each of the next three years. Due to the smoothing method, the rate of return on the actuarial value of assets for the year ending June 30, 2009 was -2.1% as compared to -19.1% on a pure market value basis.

Since these investment losses will be fully recognized over the next three plan years, the Board should be aware that recommended contribution rates (both in dollars and as a percentage of payroll) are expected to continue to increase during the smoothing period.

Use of an asset smoothing method is a common practice for public sector retirement plans. However, it is important to identify the potential impact of the deferred investment experience. Key June 30, 2009 actuarial valuation results are shown using both the actuarial value of assets and pure market value:

June 30, 2009 Results

Using Actuarial	Using Market
Value of Assets	Value of Assets
\$316,680,863	\$316,680,863
147,197,520	112,370,187
\$169,483,343	\$204,310,676
46.5%	35.5%
73.11%	82.28%
15.34%	15.34%
57.77%	66.94%
	Value of Assets \$316,680,863 147,197,520 \$169,483,343 46.5% 73.11% 15.34%

### June 30, 2009 Actuarial Valuation

### **Summary of Valuation Results**

Valuation Date Valuation Date Valuation Date June 30, 2006 June 30, 2007 June 30, 2008 June 30, 2009

Participant Counts Police Actives 318 310 299 291 Receiving Payments 196 201 215 217 Terminated Vesteds 4 5 6 8 Total 516 518 520 516 Fire Actives 202 204 206 190 Receiving Payments 245 248 247 260 Terminated Vesteds 1 1 1 1 Total 448 453 454 451 Market Value of Assets 129,093,308 138,890,814 128,297,956 112,370,187 Actuarial Value of Assets 133,494,217 138,890,814 140,780,239 147,197,520 Present Value of Future Benefits 326,126,907 338,482,187 355,905,093 373,118,148 Entry Age Normal Accrued Liability 263,813,767 277,861,524 295,579,925 316,680,863 Unfunded Entry Age Normal Accrued Liability 130,319,550 138,970,710 154,799,686 169,483,343

Recommended Contribution as a Percentage of Covered Payroll

Member Portion

Recommended Contribution (Employer and Employee)

Covered Payroll

Member Portion	11.35%	11.26%	11.16%	15.34%
City Portion	<u>45.75%</u>	<u>50.21%</u>	<u>52.36%</u>	<u>57.77%</u>
Total	57.10%	61.47%	63.52%	73.11%
Present Value of Accrued Benefits	252,125,932	264,697,122	279,478,115	299,261,444

13,558,711

23,746,840

14,670,072

23,863,923

15,685,749

24,695,779

17,418,704

23,825,564

This work product was prepared solely for the City of Springfield for the purposes described herein and may not be appropriate to use for other

purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.

### June 30, 2009 Actuarial Valuation

### Statement of Assets as of June 30, 2009

Assets	Market Value
1. Debt Securities	\$28,802,055
2. Equity Securities	61,091,886
3. Government Securities	10,752,567
4. Cash and Interest-Bearing Deposits	11,438,479
5. Accrued Interest	289,508
6. Total Assets	112,374,495
<u>Liabilities</u>	
1. Accounts Payable	4,308
Net Assets	112,370,187

### June 30, 2009 Actuarial Valuation

### **Statement of Income and Disbursements**

1.	Market Value of Assets as of July 1, 2008	\$128,297,956
2.	Income:	
3.	<ul> <li>a. Employer Contributions</li> <li>b. Employee Contributions</li> <li>c. Interest and Dividends</li> <li>d. Realized/Unrealized Gain/(Loss)</li> <li>e. Total Income</li> </ul> Expenses:	23,979,519 2,937,185 1,563,281 (26,543,164) 1,936,821
	<ul> <li>a. Employee Benefit Distributions</li> <li>b. Refund of Employee Contributions</li> <li>c. Administrative Expenses</li> <li>d. Investment Expenses</li> <li>e. Total Expenses</li> </ul>	15,076,882 2,402,747 196,537 188,424
4.	Net Increase (Decrease) = (2e) - (3e)	(15,927,769)
5.	Market Value of Assets as of June 30, 2009 = (1) + (4)	\$112,370,187
6.	Net Rate of Return	-19.1%

### June 30, 2009 Actuarial Valuation

### **Development of Actuarial Value of Assets**

		Valuation Date
		June 30, 2009
1.	Actuarial Value Beginning of Year	\$140,780,239
2.	Market Value End of Year	112,370,187
3.	Market Value Beginning of Year	128,297,956
4.	Non-Investment Cash Flows (1)	9,437,075
5.	Investment Income	
	a. Market Total: (2) - (3) - (4)	(25,364,844)
	b. Assumed Rate of Return	7.50%
	c. Amount for Immediate Recognition (2)	9,976,237
	d. Amount for Phased-In Recognition: (5a) - (5c)	(35,341,081)
6.	Phased-In Recognition of Investment Income	
	a. Current Year: .25 x (5d)	(8,835,270)
	b. First Prior Year	(4,160,761)
	c. Second Prior Year	N/A
	d. Third Prior Year	<u>N/A</u>
	e. Phased-In Investment Gain Recognized	(12,996,031)
7.	Actuarial Value End of Year: $(1) + (4) + (5c) + (6e)$	147,197,520
8.	Excess of Market Value over Actuarial Value: (2) - (7)	(34,827,333)
9.	Approximate Rate of Return on Actuarial Value	-2.1%

<sup>(1)</sup> Contributions less benefit payments

<sup>(2)</sup> Assumed Rate times (3) + Assumed Rate/2 times (4)

### June 30, 2009 Actuarial Valuation

### **Actuarial Balance Sheet**

The key elements of the actuarial funding process are illustrated in the Actuarial Balance Sheet. The format of the balance sheet captures the essential purpose of an actuarial cost method - the determination of assets sufficient to provide for pension benefits.

The Actuarial Present Value of Current and Prospective Plan Benefits is the liability that must be balanced by Current and Prospective assets. The Present Value of Future Normal Cost Contributions represents the prospective assets from contributions that will be made for costs allocated to the future.

June 30, 2009

### Liabilities

1. Actuarial Present Value of Future Benefits

a. Active Participants	\$157,483,772
b. Terminated Vested Participants	604,809
c. Retired Participants	215,029,567
d. Total	373,118,148

### **Assets**

1. Current Valuation Assets

a. Actuarial Value of Assets	147,197,520
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2. Prospective Valuation Assets

a.	Unfunded Actuarial Liability	169,483,343

b. Present Value of Future Normal Cost Contributions 56,437,285

3. Total 373,118,148

### June 30, 2009 Actuarial Valuation

### **Development of Recommended Contribution**

<ol> <li>Present Value of Future Benefits</li> <li>a. Active Participants</li> <li>b. Terminated Vested Participants</li> <li>c. Retired Participants</li> <li>d. Total</li> </ol>	\$157,483,772 604,809 <u>215,029,567</u> 373,118,148
2. Present Value of Future Normal Costs	56,437,285
3. Actuarial Value of Assets	147,197,520
4. Entry Age Unfunded Accrued Liability: (1d) - (2) - (3)	169,483,343
5. Entry Age Normal Cost	6,789,544
6. Present Value of Future Earnings	212,323,747
7. Payroll	23,825,564
8. Amortization Payment (30 Years in 2009)	10,629,160
9. Recommended Contribution: (5) + (8)	17,418,704
10. Recommended Contribution as a Percentage of Payroll Normal Cost Amortization Payment Total	28.50% 44.61% 73.11%
11. Member Portion  Tier 1 (Tier 1 Payroll = \$21,663,697)  Tier 2 (Tier 2 Payroll = \$2,161,867)  Blended Rate:  = (Tier 1 Payroll x 16.02% + Tier 2 Payroll x 8.50%) / Total Payroll	
12. City Portion	57.77%

### June 30, 2009 Actuarial Valuation

### Accelerated Contribution Schedule Required by Missouri Revised Statute 105.684

			Curren	t Methodology	Schedule	<u>A</u>	celerated Scho	edule
			Expected			Expected		
		Entry Age	Unfunded			Unfunded		
Valuation	Fiscal	Normal	Accrued	Amortization	Recommended	Accrued	Amortization	Recommended
<u>Date</u>	Year End	Cost *	<b>Liability</b>	Payment	Contribution	<b>Liability</b>	<b>Payment</b>	Contribution
	06/30/2011	6,789,544	169,483,343	10,629,160	17,418,704	169,483,343	10,629,160	17,418,704
	06/30/2012	6,993,230	173,230,023	11,049,309	18,042,539	173,230,023	11,049,309	18,042,539
06/30/2011	06/30/2013	7,203,027	175,679,900	11,408,521	18,611,548	175,679,900	11,408,521	18,611,548
06/30/2012	06/30/2014	7,419,118	177,892,244	11,774,764	19,193,882	177,892,244	11,774,764	19,193,882
06/30/2013	06/30/2015	7,641,692	179,912,850	12,152,887	19,794,579	179,912,850	12,152,887	19,794,579
06/30/2014	06/30/2016	7,870,943	181,720,492	12,543,650	20,414,593	181,720,492	12,543,650	20,414,593
06/30/2015	06/30/2017	8,107,071	183,287,336	12,651,804	20,758,875	183,287,336		21,054,635
06/30/2016	06/30/2018	8,350,283	184,582,687	12,741,219	21,091,502	184,582,687	13,365,155	21,715,438
06/30/2017	06/30/2019	8,600,791	185,879,683	12,830,747	21,431,538	185,573,033	13,796,977	22,397,768
06/30/2018	06/30/2020	8,858,815	187,198,375	12,921,772	21,780,587	186,221,815	14,243,627	23,102,442
06/30/2019	06/30/2021	9,124,579	188,540,788	13,014,435	22,139,014	186,489,177	14,705,741	23,830,320
06/30/2020	06/30/2022	9,398,316	189,907,676	13,108,788	22,507,104	186,331,666	15,184,010	24,582,326
06/30/2021	06/30/2023	9,680,265	191,299,723	13,204,877	22,885,142	185,701,929	15,679,183	25,359,448
06/30/2022	06/30/2024	9,970,673	192,717,625	13,302,751	23,273,424	184,548,360		26,162,752
06/30/2023	06/30/2025	10,269,793	194,162,100	13,402,459	23,672,252	182,814,725	16,723,604	26,993,397
				, ,	,		- 0,, 20,001	~0,775,571

<sup>\*</sup> The Entry Age Normal Cost is assumed to increase by 3% each year.

### June 30, 2009 Actuarial Valuation

### **GASB 25 and 27 Disclosure Information**

### Schedule of Funding Progress

Date of <u>Valuation</u>	Actuarial Asset <u>Value</u>	Entry Age Normal Accrued <u>Liability</u>	Unfunded Accrued <u>Liability (UAL)</u>	Funded <u>Ratio</u>	Covered <u>Payroll</u>	UAL as a Percentage of Covered Payroll
June 30, 1994	81,735,481	96,269,283	14,533,802	84.9%	13,017,803	111.6%
June 30, 1995	87,113,039	111,261,338	24,148,299	78.3%	14,816,363	163.0%
June 30, 1996	92,005,064	120,470,362	28,465,298	76.4%	15,205,892	187.2%
June 30, 1997	98,471,537	129,131,343	30,659,806	76.3%	16,616,974	184.5%
June 30, 1998	107,955,272	136,533,065	28,577,793	79.1%	17,893,509	159.7%
June 30, 1999	116,424,865	150,252,731	33,827,866	77.5%	18,448,343	183.4%
June 30, 2000	124,461,663	155,782,143	31,320,480	79.9%	19,046,000	164.4%
June 30, 2001	129,479,927	168,344,798	38,864,871	76.9%	20,222,061	192.2%
June 30, 2002	129,854,216	179,125,555	49,271,339	72.5%	22,142,466	222.5%
June 30, 2003	129,848,871	195,974,774	66,125,903	66.3%	22,816,675	289.8%
June 30, 2004	130,419,433	238,755,058	108,335,625	54.6%	24,104,871	449.4%
June 30, 2005	130,496,305	250,849,523	120,353,218	52.0%	23,866,496	504.3%
June 30, 2006	133,494,217	263,813,767	130,319,550	50.6%	23,746,840	548.8%
June 30, 2007	138,890,814	277,861,524	138,970,710	50.0%	23,863,923	582.3%
June 30, 2008	140,780,239	295,579,925	154,799,686	47.6%	24,695,779	626.8%
June 30, 2009	147,197,520	316,680,863	169,483,343	46.5%	23,825,564	711.4%

### June 30, 2009 Actuarial Valuation

### GASB 25 and 27 Disclosure Information

Schedule of Employer Contributions and Development of Net Pension Obligation

	Annual							
Fiscal	Required				Annual	Actual		
Year	Contribution	Interest	ARC	Amort.	Pension	Employer	Change	NPO
<b>Ending</b>	(ARC)	on NPO	Adjustment	Factor	Cost	Contributions	in NPO	Balance
(1)	(2)	(3)	(4)	(5)	(6)=(2)+(3)-(4)			
June 30, 1994	2,098,927				2,098,927	2,098,927	0	0
June 30, 1995	1,998,834				1,998,834	1,998,834	0	0
June 30, 1996	2,578,429				2,578,429	2,578,429	0	0
June 30, 1997	3,111,237				3,111,237	3,111,237	0	0
June 30, 1998	3,686,008				3,686,008	3,686,008	0	0
June 30, 1999	3,945,188				3,945,188	3,945,188	0	0
June 30, 2000	4,049,600				4,049,600	4,049,600	0	0
June 30, 2001	4,497,049				4,497,049	4,497,049	0	0
June 30, 2002	4,493,908				4,493,908	4,493,908	0	0
June 30, 2003	5,196,810				5,196,810	5,196,810	0	0
June 30, 2004	5,891,663				5,891,663	5,891,663	0	0
June 30, 2005	7,318,828				7,318,828	6,795,690	523,138	523,138
June 30, 2006	9,834,917	39,235	23,334	22.420	9,850,818	6,831,086	3,019,732	3,542,870
June 30, 2007		265,715	158,023	22.420	10,345,517	7,388,016	2,957,501	6,500,371
June 30, 2008	12,347,207	487,528	315,782	20.585	12,518,953	8,794,259	3,724,694	10,225,065
June 30, 2009	13,273,246	766,880	546,620	18.706	13,493,506	23,979,519	(10,486,013)	(260,948)

### June 30, 2009 Actuarial Valuation

### **Actuarial Methods**

Following are brief descriptions of the actuarial cost and asset valuation methods used in the valuation.

### Actuarial Cost Method

The Entry Age Normal Cost Method on an individual basis is used. Normal costs are computed as a level percentage of pay. The Unfunded Entry Age Accrued Liability is amortized over 30 years as a level percent of covered payroll. For this purpose, covered payroll is assumed to increase 3% per year. In the previous valuation, covered payroll was assumed to increase 4% per year for this purpose.

The Unfunded Entry Age Accrued Liability is amortized over a 30 year closed period measured from June 30, 2009. Each year, the amortization period will decrease by 1 until it reaches 25 years as of June 30, 2014. Thereafter, the amortization payment will be based on a 25 year open period. In the previous valuation, the Unfunded Entry Age Accrued Liability was amortized over a 30 year open period.

### Asset Valuation Method

An asset valuation method is used to help smooth short term fluctuations in market value.

The actuarial value of assets is equal to the prior years actuarial value of assets adjusted as follows:

- 1. increased with actual contributions for the year;
- 2. reduced by actual benefit payments and expenses for the year;
- 3. increased by investment income equal to the assumed rate of return multiplied by the beginning market value;
- 4. increased by phased in investment gains /(losses)

Each year, the amount of investment income to be phased in is equal to the excess of the plan's actual investment performance in excess of the amount credited under item 3) above. 25% of this amount plus 25% of the similar amounts calculated in each of the three preceding years are summed and recognized as the amount of phased-in gains recognized in the current year. There is no specific corridor around market value in which the resulting value must fall.

The actuarial value of assets was reset to the market value of assets for the June 30, 2007 valuation.

### June 30, 2009 Actuarial Valuation

### **Actuarial Assumptions**

Following are the primary actuarial assumptions used in performing the valuation.

Interest Rate

7.50% per annum, net of investment expenses.

### Annual Pay Increases

Years of Service	<u>Fire</u>	Police
1	7.5%	7.5%
2	7.5%	7.5%
3	7.5%	7.5%
4	7.5%	7.5%
5	7.5%	7.5%
6	7.5%	7.5%
7	4.5%	7.5%
8	4.5%	7.5%
9	4.5%	4.5%
10	4.5%	4.5%
11	3.0%	4.5%
12	3.0%	4.5%
13 and later	3.0%	3.0%

### Final Average Salary Adjustment

For Fire Members hired before June 1, 2006, the Average Salary at retirement is increased by a factor of 1.09 for Members 40 and older and a factor of 1.03 for Members younger than 40. In the previous valuation, the Average Salary at retirement was increased by a factor of 1.03 for all Fire Members hired before June 1, 2006.

For Police Members hired before June 1, 2006, the Average Salary at retirement is increased to reflect the assumption that each participant will have the maximum accrual paid out from their continuous operating holiday balance. For Members 40 and older, the maximum accrual amount is tripled. In the previous valuation, the maximum accrual amount was not tripled for Members 40 and older.

### Mortality

RP-2000 Employees, Healthy Annuitant and Disabled Mortality Tables, male and female rates. In the previous valuation, 110% of the 1983 Group Annuity Mortality Table rates were used for participants, beneficiaries and spouses. Disabled life mortality used healthy mortality set forward ten years.

### Turnover

Separation from service for reasons other than disability, death, or age/service retirement. Rates at selected ages:

	Percentage			
	Terminating i	n the next Year		
Age	<u>Police</u>	<u>Fire</u>		
25	5.27%	1.75%		
30	4.83%	1.61%		
35	4.47%	1.49%		
40	3.84%	1.28%		
45	3.21%	1.07%		
50	1.52%	0.51%		
55	0.33%	0.11%		

Forfeiture of City Provided Benefit A vested member who terminates employment may elect to receive a return of his/her own contributions and forfeit any City-provided benefit. The portion of members making such election at selected ages:

<u>Age</u>	Percentage Electing ROC
35 and under	100%
36 - 54	grading from 95% to 5%
55 and over	0%

### Rate of Disability

Probability of becoming disabled during the next year. Rates at selected ages:

	Percentage Becoming			
	Disabled in the Next Year			
<u>Age</u>				
20	0.25%			
25	0.29%			
30	0.34%			
35	0.43%			
40	0.58%			
45	0.89%			
50	1.86%			
55	3.80%			

In the previous valuation, the rates were 10% lower at ages 41-45, 20% lower at ages 46-50 and 25% lower at ages 51-55.

100% of all disabilities are assumed to be duty related.

Workers Compensation offset to the plan disability benefit is assumed to be zero.

### Rates of Retirement

Probability of an eligible member retiring under the age/service provisions during the next year. Rates are as follows:

	Percentage Retiring
<u>Age</u>	In the Next Year
45	20%
46	20%
47	25%
48	25%
49	25%
50	30%
51	25%
52	25%
53	25%
54	35%
55	60%
56	60%
57	60%
58	60%
59	60%
60	100%

In the previous valuation, the rates were 15% at ages 45-46 and 20% at ages 47-49 and 51-52.

### Dependent Information

For retired members, actual marital status and spouse birth date are used. For active members, 90% are assumed to be married, with males assumed three years older than their spouses. Members are assumed to have no dependent children.

### <u>Cost-of-Living Adjustment</u> (<u>COLA</u>):

Employees hired before June 1, 2006: Automatic 3% COLA reflected.

Employees hired on or after June 1, 2006: No COLA assumed.

### June 30, 2009 Actuarial Valuation

### **Summary of Plan Provisions**

A summary of the current primary provisions of the Fund are described below. A complete description of the provisions can be found in Sections 2-441 through 2-482 of the Springfield City Code as restated effective May 15, 2006.

### Average Salary

Average of the highest three years salary within the last 10 Years of Service.

Employees hired before June 1, 2006: Salary for this calculation is equal to actual salary before deductions, plus payments for unused floating holidays, unused compensatory time, scheduled holidays, Kelly days, pin days and accrued vacation time.

Employees hired on or after June 1, 2006: Salary for this purpose is equal to actual salary before deductions paid for hours worked or amounts paid for leave time taken in lieu of hours worked within the said three-year period. Salary does not include payments for unused floating holidays, unused compensatory time, unused leave granted in lieu of scheduled holidays, unused Kelly days, unused pin days, unused accrued vacation time, vacation buy out amounts, or any other nonrecurring lump sum monetary amounts for unused leave time of any kind paid out at time of separation of employment.

### Normal Retirement Age

Eligibility for unreduced benefits upon meeting any of the following:

### Employees hired before June 1, 2006:

- Age 50 and 20 Years of Service,
- 25 Years of Service, or
- Age 60.

### Employees hired on or after June 1, 2006:

- Age 55 and 25 Years of Service, or
- Age 60.

### Age/Service Benefit

Employees hired before June 1, 2006: A monthly benefit equal to 1/12 of Average Salary times 2.8% times Years of Service. The maximum benefit is 70% of Average Salary.

Employees hired on or after June 1, 2006: A monthly benefit equal to 1/12 of Average Salary times 2.5% times Years of Service. The maximum benefit is 75% of Average Salary.

### Normal Form of Payment

The benefit is payable for the member's lifetime. If the member should predecrease his/her spouse, the spouse is entitled to a lifetime survivors benefit. The amount of the benefit is a percentage of the Average Salary. The percentage is equal to 25% plus 1-1/8% for each Year of Service over five years, not to exceed 50% in total.

### Cost of Living Adjustment (COLA)

Employees hired before June 1, 2006: Every July 1<sup>st</sup>, the monthly pension is increased by 3% for the following groups of retirees provided pension payment has been paid at least 12 months prior to July 1:

- Age/service retirees age 56 or greater,
- Disability retirees of any age.

Employees hired on or after June 1, 2006: There is no automatic COLA. However, under certain conditions and at the Board's discretion, a COLA of no more than 3% may be granted to retirees who meet the above criteria.

### Early Retirement Age

Eligibility for early retirement is satisfied upon attainment of age 55 and completion of five Years of Service.

### Early Retirement Benefit

Determined using regular formula and reducing the result 1/200 for each month by which the benefit start date precedes age 60.

### Member Contributions

Employees hired before June 1, 2006: 11.35% of pay.

Employees hired on or after June 1, 2006: 8.50% of pay.

### **Duty Disability**

All members are eligible.

Employees hired before June 1, 2006: A monthly benefit equal to 2/3 of the salary in effect at the time of retirement.

Employees hired on or after June 1, 2006: If the member is at least 25% disabled, the monthly benefit is equal to 2/3 of the salary in effect at the time of retirement.

If the member is less than 25% disabled, the monthly benefit is equal to 50% of the salary in effect at the time of retirement.

### Non-Duty Disability

Employees hired on or before January 1, 2005: A monthly benefit equal to 2.45% of Average Salary times Years of Service. A member must have three Years of Service to be eligible.

Employees hired after January 1, 2005 and before June 1, 2006: A monthly benefit equal to 2.45% of Average Salary times Years of Service. A member must have five Years of Service to be eligible.

Employees hired on or after June 1, 2006: A monthly benefit equal to 2.1875% of Average Salary times Years of Service. A member must have five Years of Service to be eligible.

In all cases, the minimum/maximum benefits are 25%/50% of Average Salary.

### **Duty Death in Service**

All members are eligible. A monthly benefit to the spouse equal to 50% of salary in effect at time of death. Additional benefits to unmarried children under age 18, but total cannot exceed 75% of pre-death salary.

### Non-Duty Death in Service

A member is eligible after completing five Years of Service. The benefit is 25% of Average Salary plus 1 1/8% of Average Salary for each Year of Service in excess of five, not to exceed 50%. Additional benefits to unmarried children under 18 but total benefit cannot exceed 60% of Average Salary.

### Return of Contributions

Employees hired before June 1, 2006: Member contributions are returned to age/service retirees and disability retirees upon commencement of monthly benefits, without interest.

Vested members who terminate before eligible for retirement may elect to receive a return of their own contributions without interest. Election of this benefit results in a forfeiture of any City provided benefit.

Employees hired on or after June 1, 2006: Member contributions are not returned to retirees.

### June 30, 2009 Actuarial Valuation

### **Summary of Participant Data**

		Police June 30, 2009	Fire June 30, 2009
1.	Active Participants		
	<ul> <li>a. Count</li> <li>b. Plan Compensation</li> <li>c. Average Compensation</li> <li>d. Average Age</li> <li>e. Average Service</li> </ul>	291 14,497,004 49,818 37.4 10.6	190 9,328,560 49,098 39.4 11.0
2.	Retired Participants (including Beneficiaries)		
	<ul><li>a. Count</li><li>b. Total Monthly Benefits</li><li>c. Average Monthly Benefits</li><li>d. Average Age at Onset of Disability Retirements</li></ul>	217 \$617,379 \$2,845 41.1	260 \$726,521 \$2,794 44.9
3.	Terminated Vested Participants		
	<ul><li>a. Count</li><li>b. Total Monthly Benefits</li><li>c. Average Monthly Benefits</li></ul>	8 \$7,808 \$976	1 \$1,327 \$1,327

### June 30, 2009 Actuarial Valuation

### Retiree and Beneficiary Distributions

Fire
Distribution of Service Retirees

Age	_Number_	Total Monthly Pension	Average Monthly Pension
Under 45	0	\$0	\$0
45 - 49	1	4,578	4,578
50 - 54	15	52,094	3,473
55 – 59	24	88,382	3,683
60 - 64	27	90,579	3,355
65 – 69	37	112,217	3,033
70 - 74	19	56,730	2,986
75 – 79	15	38,847	2,590
80 +	<u>13</u>	<u>29,182</u>	2,245
Totals	151	\$472,609	\$3,130

Police
Distribution of Service Retirees

		Total	Average		
Age	Number	<b>Monthly Pension</b>	Monthly Pension		
Under 45	0	\$0	\$0		
45 - 49	9	40,581	4,509		
50 - 54	14	53,408	3,815		
55 - 59	23	81,514	3,544		
60 - 64	32	99,996	3,125		
65 - 69	19	57,725	3,038		
70 - 74	22	54,803	2,491		
75 – 79	6	14,504	2,417		
80 +	<u>1</u>	1,277	1,277		
Totals	126	\$403,808	\$3,205		

### June 30, 2009 Actuarial Valuation

### Retiree and Beneficiary Distributions

Fire Distribution of Disability Retirees

		Total	Average		
Age	Number	<b>Monthly Pension</b>	Monthly Pension		
Under 45	2	\$5,145	\$2,573		
45 - 49	8	23,026	2,878		
50 - 54	8	23,688	2,961		
55 – 59	10	31,538	3,154		
60 - 64	14	38,900	2,779		
65 - 69	12	33,135	2,761		
70 - 74	2	5,702	2,851		
75 – 79	3	6,691	2,230		
80 +	<u>2</u>	<u>2,696</u>	1,348		
Totals	61	\$170,521	\$2,795		

Police
Distribution of Disability Retirees

		Total	Average		
Age	Number	Monthly Pension	Monthly Pension		
Under 45	9	\$19,653	\$2,184		
45 - 49	12	32,372	2,698		
50 - 54	12	34,889	2,907		
55 – 59	8	22,791	2,849		
60 - 64	9	23,741	2,638		
65 - 69	4	10,227	2,557		
70 - 74	2	4,423	2,211		
75 – 79	4	11,413	2,853		
+ 08	<u>0</u>	<u>0</u>	0		
Totals	60	\$159,510	\$2,658		

### June 30, 2009 Actuarial Valuation

### Retiree and Beneficiary Distributions

Fire Distribution of Beneficiaries

		Total	Average		
Age	<u>Number</u>	Monthly Pension	<b>Monthly Pension</b>		
Under 45	1	\$2,110	\$2,110		
45 – 49	0	0	0		
50 - 54	1	1,407	1,407		
55 - 59	4	9,540	2,385		
60 - 64	3	4,866	1,622		
65 – 69	6	10,566	1,761		
70 - 74	7	13,278	1,897		
75 – 79	9	16,652	1,850		
80 +	<u>17</u>	24,973	1,469		
Totals	48	\$83,392	\$1,737		

Police
Distribution of Beneficiaries

		Total	Average		
Age	Number	<b>Monthly Pension</b>	Monthly Pension		
Under 45	1	\$1,608	\$1,608		
45 – 49	1	1,865	1,865		
50 - 54	1	2,841	2,841		
55 59	3	6,851	2,284		
60 - 64	3	5,171	1,724		
65 – 69	5	8,821	1,764		
70 - 74	6	8,386	1,398		
75 – 79	6	9,555	1,592		
80 <b>+</b>	<u>5</u>	8,964	1,793		
Totals	31	\$54,062	\$1,744		

## June 30, 2009 Actuarial Valuation

# Distribution of Active Police Participants by Age and by Years of Service (as of June 30, 2009)

		Total	4	44	29	2 6	42	41	: ∝	9	,		0	291
	40 and up	No.	0	o O	0	0	0	0	0	0	. —	0	0	-
	35 to 39	No.	0	0	0	0	0	0	0	0	0	0	0	0
	30 to 34	No.	0	0	0	0	0	0	0	0	0	0	0	0
VICE	25 to 29	No.	0	0	0	0	0	_	_	0	0	0	0	2
YEARS OF CREDITED SERVICE	20 to 24	No.	0	0	0	0	2	16	3	0	0	0	0	21
S OF CREI	15 to 19	No.	0	0	0	3	14	4	3	9	0	_	0	41
YEAR	10 to 14	No.	0	0	12	45	16	9		0	0	0	0	80
	5 to 9	No.	0	17	42	59	8	4	0	0	0	0	0	100
	1 to 4	No.	4	27	7	S	2	0	0	0	0	0	0	45
	Under 1	No.	0	0		0	0	0	0	0	0	0	0	-
	Attained	Age	Under 25	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 and up	Total

## June 30, 2009 Actuarial Valuation

# Distribution of Active Fire Participants by Age and by Years of Service (as of June 30, 2009)

### Total 31 44 44 37 8 8 0 0 190 40 and up Žo. 00000000 35 to 39 Š. 00000000 30 to 34 00000000 0 25 to 29 YEARS OF CREDITED SERVICE 000000 0 20 to 24 10 $\infty$ 0 15 to 19 45 21 1 9 10 to 14 Š. 0 7 20 18 53 9 5 to 9 Š Š 8 0 0 0 42 000 1 to 4 No. Under Š. 0000000 2 60 to 64 70 and up Attained Under 25 25 to 29 30 to 34 35 to 39 45 to 49 50 to 54 55 to 59 65 to 69 40 to 44 Age Total

### June 30, 2009 Actuarial Valuation

### Summary of Changes in Participant Data

	Active <u>Participants</u>	Retired Participants	Terminated Vested Participants	<u>Total</u>
Count as of July 1, 2008	505	462	7	974
New Entrants	16	0	0	16
Age and Service Retirements	(20)	20	0	0
Duty Disability Retirements	(2)	2	0	0
Non-Duty Disability Retirements	(1)	1	0	0
Duty Related Deaths	0	0	0	0
Non-Duty Related Deaths	(1)	1	0	0
Vested Terminations - Received Refund	(9)	0	0	(9)
Vested Terminations - No Refund	(3)	0	3	0
Nonvested Terminations - Received Refund	(2)	0	0	(2)
Nonvested Terminations - No Refund	(2)	0	0	(2)
Deceased with Beneficiary	0	(4)	0	(4)
New Beneficiaries	0	4	0	4
Deceased without Beneficiary	0	(6)	0	(6)
Received Refund	0	0	(1)	(1)
Show-ups	0	0	0	0
Data Corrections	<u>0</u>	<u>(3)</u>	<u>0</u>	<u>(3)</u>
Total Changes	<u>(24)</u>	<u>15</u>	<u>2</u>	<u>(7)</u>
Count as of June 30, 2009	<u>481</u>	<u>477</u>	<u>9</u>	<u>967</u>